CLAIMS

1. A composition comprising:

(a) a biotin conjugate comprising:

(i) a biotin covalently coupled to

(ii) a pharmacologically active agent; and

(b) an anti-biotin antibody selectively bound to said biotin to form a complex.

2. The composition of claim 1, wherein the composition is lyophilized.

3. The composition of claim 1, further comprising a pharmaceutically acceptable carrier.

4. The composition of claim 3, wherein the pharmaceutically acceptable carrier is acceptable for a mode of delivery selected from the group consisting of: intradermal delivery, intramuscular delivery, intraperitoneal delivery, intravenous delivery, subcutaneous delivery, and controlled release delivery.

5. The composition of claim 1, wherein the biotin is selected from the group consisting of L-biotin, D-biotin and derivative thereof.

6. The composition of claim 1, wherein the pharmacologically active agent is a ligand which binds to a G-protein coupled receptor.

7. The composition of claim 1, wherein the pharmacologically active agent is a chemokine.

8. The composition of claim 7, wherein the chemokine is selected from the group consisting of the chemokines of Table 1.

9. The composition of claim 7, wherein the chemokine has a carboxyl terminus and the biotin is covalent attached to the carboxyl terminus of the chemokine.

10. The composition of claim 1, wherein the pharmacologically active agent has an agonist activity.

11. The composition of claim 1, wherein the pharmacologically active agent has an antagonist activity.

12. The composition of claim 1, wherein the biotin is covalently coupled to the pharmacologically active agent via a linker molecule.

13. The composition of claim 1, wherein the complex has a half-life ranging from about 15 minutes to about 1 hour in the presence of supra physiological levels of biotin.

14. The composition of claim 1, wherein the anti-biotin antibody has an affinity constant ranging from about 1.0 to about 100.0 nanomolar.

15. The composition of claim 1, wherein the complex has a half-life ranging from about 15 minutes to about 1 hour in the presence of supra physiological levels of biotin and an affinity constant ranging from about 1.0 to about 100.0 nanomolar.

16. The composition of claim 1, wherein the anti-biotin antibody is selected from the group consisting of an intact antibody, and an antibody fragment.

17. The composition of claim 1, wherein the anti-biotin antibody is a human antibody or fragment thereof.

18. The composition of claim 1, wherein the anti-biotin antibody has a subclass selected from the group consisting of a IgG1 subclass, and an IgG3 subclass.

19. The composition of claim 1, wherein the anti-biotin antibody comprises a therapeutic agent attached thereto.

20. The composition of claim 1, wherein the anti-biotin antibody comprises a therapeutic agent that is a cytotoxic agent.

21. The composition of claim 1, wherein the anti-biotin antibody comprises a diagnostic agent attached thereto.

22. The composition of claim 1, wherein the anti-biotin antibody has a dual specificity.

23. The composition of claim 22, wherein the anti-biotin antibody selectively binds to a tumor cell associated antigen.

24. The composition of claim 22, wherein the anti-biotin antibody selectively binds to a viral associated antigen.

25. The composition of claim 1, wherein the complex has a half-life of from one day to one month in vivo.

26. The composition of claim 1, wherein the complex has a half-life of from one week to two weeks in vivo.

27. A composition comprising:

(a) a therapeutically effective amount of a biotin; and

(b) a pharmaceutically acceptable carrier.

28. The composition of claim 27, wherein the therapeutically effective amount of biotin is from about 100 μg to about 100 mg.

29. The composition of claim 27, wherein the therapeutically effective amount of biotin is from about 100 μg to about 10 mg.

30. The composition of claim 27, wherein the therapeutically effective amount of biotin is from about 1 mg to about 10 mg.

31. A composition comprising:

(a) a *first* biotinylated agent comprising (i) a *first* biotin covalently coupled to (ii) a *first* agent having a *first* pharmacological activity; and

(b) a *second* biotinylated agent comprising (i) a *second* biotin covalently coupled to (ii) a *second* agent having a *second* pharmacological activity;

wherein said first biotin and said second biotin may be the same or different;

32. The composition of claim 31, further comprising:

(c) an anti-biotin antibody selectively bound to at least one of said first and said second biotin to form a complex.

33. The composition of claim 32, wherein the anti-biotin antibody binds to a receptor expressed on a cell selected from the group consisting of a cytotoxic T cell, a monocyte, and a virus-infected cell.

34. A composition comprising:

(a) a biotin conjugate comprising

(i) a biotin covalently coupled to

(ii) an agent having a pharmacological activity; and

(b) a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier is suitable for parenteral administration.

35. A method for treating inflammation in a subject, the method comprising:

(1) administering to the subject a therapeutically effective amount of a complex comprising:

(a) a biotin conjugate comprising:

(i) a biotin covalently coupled to

(ii) an agent that selectively binds to a receptor expressed by a pre-selected cell at a site of inflammation in the subject; and

(b) an anti-biotin antibody selectively bound to said biotin to form the complex;

wherein administration of the complex prevents or reduces inflammation in the subject.

36. The method of claim 35, wherein the biotinylated agent and the anti-biotin antibody are sequentially administered to the subject.

37. A method to modulate a chemoattractive gradient in a subject, comprising:

(1) administering to the subject an effective amount of the complex of claim 1 to modulate the chemoattractive gradient.

38. A method for delivering a cytotoxic agent to a pre-selected cell, comprising:

(1) contacting a population of cells containing a pre-selected leukocyte with an effective amount of a complex comprising a cytotoxic agent under conditions to deliver the cytotoxic agent to the pre-selected cell, said complex comprising:

(a) a biotinylated agent comprising:

(i) a biotin covalently coupled to

(ii) an agent that selectively binds to a receptor expressed by the pre-selected cell; and

(b) an anti-biotin antibody selectively bound to said biotin to form the complex, wherein the anti-biotin antibody comprises the cytotoxic agent; and

wherein contacting the population of cells with the complex is performed under conditions to deliver the cytotoxic agent to the pre-selected cell.

39. A method for *modulating* a pre-selected chemotactic response in a subject, comprising:

(1) administering to a subject in need of such treatment a therapeutically effective amount of a biotinylated chemokine *agonist* or chemokine *antagonist* to modulate the chemotactic response.

40. The method of claim 39, wherein the agonist or antagonist is complexed with an anti-biotin antibody.

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